

PULSE DETONATION POWER SYSTEM AND PLANT WITH FUEL  
PRECONDITIONING

ABSTRACT OF THE DISCLOSURE

**[0040]** A power system includes a fuel preconditioner adapted to convert a fuel to at least one conditioned fuel, a pulse detonation combustor, and a turbine. The pulse detonation combustor is adapted to receive the conditioned fuel and a primary oxidizer and to detonate a mixture including the conditioned fuel and the primary oxidizer and exhaust a number of detonation products. The turbine is positioned downstream from and in flow communication with the pulse detonation combustor. A power plant includes at least one fuel preconditioner and a number of power systems. Each power system includes a pulse detonation combustor and a turbine positioned downstream from and in flow communication with the pulse detonation combustor.